C.1 BACKGROUND

The Environmental Protection Agency (EPA) Office of Environmental Information (OEI) is responsible for the management and implementation of secure Information Technology (IT) infrastructure and ensures that this infrastructure provides EPA with IT solutions that support mission success. In addition, OEI is charged with IT investment management, which entails annual reviews of the IT portfolio of the Agency, maintenance of the Enterprise Architecture (EA), and development of policies and standards to guide IT expenditures. OEI also leads the Agency's Security Program which is charged with ensuring the Agency has secure IT infrastructure. OEI's vision is to advance the creation, management, and use of information as a strategic resource by providing many IT services and products.

The Office of Information Technology Operations (OITO) within OEI is the Agency focal point for developing and implementing policies for IT and security to ensure the adequacy and integrity of the Agency infrastructure. OITO's Strategic Technology direction focuses on consolidating IT infrastructure and management, enabling informed IT business decisions, enabling a mobile workforce, and establishing a holistic network of governance policies. These key directions intersect with the Agency's strategic plan, the OEI vision, and the President's Management Agenda for establishing a citizen-centered, results-oriented, and market-based IT management and provisioning infrastructure and product suite.

To assist in meeting its strategic objectives, OEI recently underwent a reorganization to improve its IT operations, streamline activities, and focus on delivering improved services to its customers at lower costs. OITO is now organized into six divisions:

a. Desktop Support Services Division (DSSD)
b. Endpoint and Collaboration Solutions Division (ECSD)
c. Enterprise Hosting Division (EHD)
d. Network and Security Operations Division (NSOD)
e. Service and Business Management Division (SBMD)
f. Washington, D.C. Operations Division (WDCOD)

The EPA considers its infrastructure the backbone of the Agency's IT strategy. It consists of, but is not limited to, physical and cloud hosting, communications services, physical and cyber security, application platform, databases, and the software applications that support the whole of EPA. The infrastructure is managed by the OITO divisions. Services provided under this TO are managed by NSOD.

Previously, many of the functions within scope (e.g., infrastructure, security, etc.) were managed as separate contracts or by Federal employees depending upon the geographic location. The EPA is moving toward a coordinated, cohesive approach to Local Area Network (LAN) operations and management. Additional background information regarding the specific tasks will be provided herein.

EPA offices are listed in Section J, Attachment V. Locations are subject to change as identified by EPA as sites are added, removed, or relocated. The contractor shall be responsible for LAN operations at all EPA locations, and therefore, on occasion, may be required to travel to the EPA locations. Some sites require after-hours support and are designated as Extended Support sites and are denoted with "ES" in Section J, Attachment V. Special after hours handling for these

sites can be found in Section C.5.5.1.1, Extended Support Locations, and in Section H.14, Service Level Agreements (SLAs).

C.1.1 PURPOSE

The purpose of this TO is to develop and operate EPA's infrastructure to be reliable, secure, and technologically advanced. The services obtained under this TO support the entirety of EPA at all geographic locations and numerous research facilities across the United States (U.S.) and the world.

This TO under GSA's Alliant program will provide EPA with LAN enterprise services. The new TO will use new technology, provide centralized network management, and conform to EPA's Enterprise Architecture.

The EPA is migrating from dispersed, predominantly unmanaged LANs to centrally monitored, maintained, and coordinated LAN operations and management. The Agency needs centralized network and security management to implement this new, cohesive LAN approach. Centralized management will span the LANs at central and regional EPA office and laboratory locations.

C.1.2 AGENCY MISSION

The EPA's mission is to protect human health and the environment. Since 1970, EPA has worked for a cleaner, healthier environment for the American people. EPA employs over 15,000 people across the country, including offices in Washington, D.C., 10 regional offices, and more than a dozen laboratories and other locations. EPA users come from a variety of disciplines; more than half are engineers, scientists, and policy analysts. In addition, many employees are legal, public affairs, financial, information management, and computer specialists. EPA is led by its Administrator, who is appointed by the President of the U.S.

The OEI within EPA is led by the Agency's Chief Information Officer (CIO) to manage the life cycle of information and support EPA's mission of protecting human health and the environment. OEI's mission is to identify and implement innovative IT and information management solutions that strengthen EPA's ability to achieve its goals. OEI is focused on the quality, efficiency, and reliability of the technology used to execute the mission of EPA.

C.2 SCOPE

The scope of this LAN Enterprise Services (LANES) TO includes the provisioning, operations, and security of the LAN infrastructure. The scope includes, but is not limited to, the following:

a. Centralized Administration of LAN Enterprise Services
b. Network Connectivity
c. Design and Engineering
d. Installation
e. Acquisition
f. Warranty
g. Maintenance
h. Remote and Onsite Support
i. Configuration Management

j. Computer Security Incident Response Capability (CSIRC) Incident Response Support and Security Patches/Updates Operating System Updates/Upgrades
k. Operations Monitoring and Oversight

The scope DOES NOT include support for Data Center switches, Wide Area Network (WAN) circuits or routers, Internet Protocol (IP) address management, or Domain Name Server (DNS) services currently provided by EPA's Network and Security Operations team.

Where a local EPA office provides some LAN support using existing local resources (contractor or internal Government), the LANES scope includes supplemental services on request. Tier 1 Help Desk support is provided locally and is not a LANES responsibility. Tier 2 tickets are within the scope of LANES and the contractor shall respond to them when requested. Tier 3 is also within the LANES scope.

The scope includes the adherence to all applicable EPA, OEI, OITO, and Agency Working Capital Fund (WCF) policies, procedures, directives, and standards. Interfaces include, but are not limited to, OITO Management, OITO Deployment Team, OITO Security Team, customers, service providers, Agency Teams, and other technology experts required to deliver the services specified in the TO. The contractor shall continuously coordinate, communicate, and cooperate across tasks with the EPA OITO community and other support contractors.

The scope includes the use of EPA-provided Government-Furnished Property (GFP) and Government-Furnished Information (GFI) (Sections H.2 and H.3 respectively) for task/work assignments and contract deliverables, and eBusiness for WCF order processing, reporting, workload, and other requirements as needed.

C.3 CURRENT INFORMATION TECHNOLOGY (IT)/NETWORK ENVIRONMENT

Specific details regarding the different environments are described within the individual tasks, as well as in Section J, Attachment H.

C.4 OBJECTIVES

The objective of this LANES TO is to support EPA's LAN infrastructure while complying with standards and EPA's EA, continuously improving, coordinating with others, and demonstrating efficiencies. EPA seeks significant coordination and communication of plans and activities by the contractor with OITO customers and other TOs. Work performed shall be effectively coordinated and synchronized with work being performed under other TOs to ensure that customer requirements are met.

All hardware and software operated under the TO shall be operated in compliance with EPA policies, directives, Standard Configuration Documents (SCDs), security configuration guidelines, and vendor-recommended patch levels. An inventory of all systems operated under the TO shall be maintained and include an accurate accounting of each system's compliance status with regard to operation, configuration, and security requirements. An inventory of all systems and software shall be maintained, which shall identify the warranty or maintenance status, ensuring consistent maintenance and license coverage. This data shall be maintained in EPA-provided systems and be readily accessible.

LAN infrastructure shall be configured to maximize energy efficiency to the maximum extent practical, using firmware or software that can measure performance and reduce power

requirements during quiescent periods. Reduced power equates to a reduction in waste heat which in turn reduces Heating, Ventilation, and Air Conditioning (HVAC) requirements resulting in additional cost savings and a lower carbon footprint.

C.5 TASKS

C.5.1 TASK 1 – PROVIDE PROJECT MANAGEMENT

The contractor shall provide project management support under this TO. This includes the management and oversight of all activities performed by contractor personnel, including subcontractors, to satisfy the requirements identified in this Statement of Work (SOW). The contractor shall identify a Project Manager (PM) by name who shall provide management, direction, administration, quality assurance, and leadership of the execution of this TO.

C.5.1.1 SUBTASK 1.1 – COORDINATE PROJECT KICK-OFF MEETING

The contractor shall schedule, coordinate, and host a Project Kick-Off Meeting at the location approved by the Government **(Section F, Deliverable 3)**. The meeting will provide an introduction between the contractor personnel and Government personnel who will be involved with the TO. The meeting will provide the opportunity to discuss technical, management, and security issues, and travel authorization and reporting procedures. At a minimum, the attendees shall include Key contractor Personnel, representatives from the directorates, other relevant Government personnel, and the FEDSIM Contracting Officer's Representative (COR).

At least three days prior to the Kick-Off Meeting, the contractor shall provide a Kick-Off Meeting Agenda **(Section F, Deliverable 2)** for review and approval by the FEDSIM COR and the EPA Technical Point of Contact (TPOC) prior to finalizing. The agenda shall include, at a minimum, the following topics/deliverables:

a. Points of Contact (POCs) for all parties.
b. Draft Project Management Plan (PMP) **(Section F, Deliverable 8)** and discussion including schedule, tasks, etc.
c. Prioritization of contractor activities.
d. Personnel discussion (i.e., roles and responsibilities and lines of communication between contractor and Government).
e. Staffing Plan and status.
f. Transition-In Plan **(Section F, Deliverable 15)** and discussion.
g. Security discussion and requirements (i.e., building access, badges, Common Access Cards (CACs)).
h. Invoicing requirements.
i. Transition discussion.
j. Updated Baseline Quality Control Plan (QCP) **(Section F, Deliverable 12).**

The Government will provide the contractor with the number of Government participants for the Kick-Off Meeting, and the contractor shall provide sufficient copies of the presentation for all present.

The contractor shall draft and provide a Kick-Off Meeting Minutes Report **(Section F, Deliverable 7)** documenting the Kick-Off Meeting discussion and capturing any action items.

C.5.1.2 SUBTASK 1.2 – COORDINATE A FINANCIAL KICK-OFF MEETING

The contractor shall schedule, coordinate, and host a Financial Kick-Off Meeting at the location approved by the Government **(Section F, Deliverable 4)**. The meeting will provide an introduction between the contractor personnel and Government personnel who will be involved with the funding, invoicing, and other financial aspects of the TO. The meeting will provide the opportunity to discuss financial issues and reporting procedures, including funding and reporting procedures for technical consulting projects (Task 4).

C.5.1.3 SUBTASK 1.3 - PREPARE A MONTHLY STATUS REPORT (MSR)

The contractor shall develop and provide an MSR (Section J, Attachment E) **(Section F, Deliverable 5)**. The MSR shall include the following:

a. Activities during reporting period, by task (include on-going activities, new activities, and activities completed, and progress to date on all above mentioned activities). Each section shall start with a brief description of the task.
b. Problems and corrective actions taken. Also include issues or concerns and proposed resolutions to address them.
c. Personnel gains, losses, and status (security clearance, etc.).
d. Government actions required.
e. Schedule (show major tasks, milestones, and deliverables; planned and actual start and completion dates for each).
f. Summary of trips taken, conferences attended, etc. (attach Trip Reports to the MSR for reporting period).
g. Items purchased on behalf of the Government during the month,
h. Accumulated invoiced cost for each CLIN up to the previous month.
i. Projected cost of each CLIN for the current month.
j. Monthly Performance against the Service Level Agreements (SLAs) in TO Section H.14. The contractor shall discuss all measurable factors that do not meet the Performance Standards and provide mitigation that can be completed by the next monthly reporting period. The contractor shall include, in every MSR, its performance against the stated SLAs during the time period of the report.
k. List of all deliverables, by full name, delivered during the period reported through the MSR.

C.5.1.4 SUBTASK 1.4 – CONVENE TECHNICAL STATUS MEETINGS

The contractor PM shall convene a monthly[1] Technical Status Meeting with the EPA TPOC, FEDSIM COR, and other Government stakeholders **(Section F, Deliverable 6)**. The purpose of this meeting is to ensure all stakeholders are informed of the monthly activities and MSR, provide opportunities to identify other activities and establish priorities, and coordinate resolution of identified problems or opportunities. The contractor PM shall provide minutes of these meetings, including attendance, issues discussed, decisions made, and action items

[1] Or at other intervals, on request.

assigned, to the EPA TPOC and FEDSIM COR within five workdays following the meeting **(Section F, Deliverable 7)**.

C.5.1.5 SUBTASK 1.5 – PREPARE A PROJECT MANAGEMENT PLAN (PMP)

The contractor shall document all support requirements in a PMP. The contractor shall provide the Government with a draft PMP **(Section F, Deliverable 8**) on which the Government will make comments. The final PMP **(Section F, Deliverable 9)** shall incorporate the Government's comments.

The PMP shall:

a. Describe the proposed management approach.
b. Contain detailed Standard Operating Procedures (SOPs) for all tasks.
c. Include milestones, tasks, and subtasks required in this TO.
d. Provide for an overall Work Breakdown Structure (WBS) with associated responsibilities and partnerships between Government organizations.
e. Include the Baseline QCP.

C.5.1.6 SUBTASK 1.6 – UPDATE THE PROJECT MANAGEMENT PLAN (PMP)

The PMP is an evolutionary document that shall be updated annually at a minimum **(Section F, Deliverable 10)**. The contractor shall work from the latest Government-approved version of the PMP.

C.5.1.7 SUBTASK 1.7 – PREPARE TRIP REPORTS

The Government will identify the need for a Trip Report when the request for travel is submitted **(Section F, Deliverable 11)**. The contractor shall keep a summary of all long-distance travel including, but not limited to, the name of the employee, location of travel, duration of trip, and POC at travel location. At a minimum, trip reports shall be prepared with the information provided in the Trip Report Template, Section J, Attachment F.

C.5.1.8 SUBTASK 1.8 – UPDATE BASELINE QUALITY CONTROL PLAN (QCP)

The contractor shall update the QCP submitted with its proposal **(Section F, Deliverable 12)** and then provide a final baseline QCP as required in Section F **(Section F, Deliverable 13)**. The contractor shall periodically update the QCP, as required in Section F **(Section F, Deliverable 14)**, as changes in program processes are identified.

C.5.1.9 SUBTASK 1.9 – BUDGET BRIEFINGS

The contractor shall account for all costs under WCF cost centers identified by the EPA TPOC. The contractor shall provide Budgetary Briefings **(Section F, Deliverable 18)**. The contractor shall modify the content and format of this briefing according to the Government's instructions.

The Budgetary Briefings shall include, at a minimum:

a. A list of the EPA service areas by numerical subtask.
b. A spreadsheet with the costs (actual and projected) for each service area by past and current Fiscal Year (FY).

c. A spreadsheet detailing funding (actual and projected) for each CLIN with separate columns for average monthly burn rates. The contractor shall adhere to all applicable EPA, OEI, OITO, and Agency WCF policies, procedures, directives, and standards. Access to documentation and EPA resources not included with this solicitation will be provided upon award.

C.5.1.10 SUBTASK 1.10 – DOCUMENTATION SUPPORT

At a minimum, the contractor shall update/develop and provide the following documentation:

a. Updates to SCD **(Section F, Deliverable 19)**.
b. Updates to SOPs **(Section F, Deliverable 20)** and System Documentation **(Section F, Deliverable 21)** based on the index and updates when there are system changes.
c. Workflow Process Information.
d. Commercial Off-the-Shelf (COTS) Updates/Modification Plans.
e. System security plan that confirms how the contractor's proposed switching infrastructure is managed, maintained, administered, and protected from threats and vulnerabilities. Guidance on the expected minimum content and scope of this system security plan can be found in National Institute of Standards and Technology (NIST) Special Publication (SP) 800-18. http://nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication800-18r1.pdf
f. Network Drawings **(Section F, Deliverable 24)**.

The contractor shall integrate current documentation and/or produce documentation of system management tools and applications, software configurations and settings, and system administration processes and procedures sufficient to meet the "specific knowledge" standard of documentation. The specific knowledge standard states that personnel familiar with the technology, but not familiar with the EPA environment, can manage and maintain the EPA environment based on the documentation. This documentation shall be stored in a centralized document repository in Microsoft SharePoint provided by EPA and maintained in a manner as to be auditable by parties with appropriate authority.

C.5.2 TASK 2 - TRANSITION-IN

The contractor shall provide a Transition-in Plan at the Kick-Off Meeting **(Section F, Deliverable 15)**, updated from the version provided in the Technical Proposal (L.6.3). During the transition-in, the contractor shall ensure that there will be minimum service disruption to vital Government business and no service degradation during and after transition. All transition activities shall be completed No Later Than (NLT) 90 calendar days after Project Start (PS).

Completion of the 90 day transition-in refers to the transition of ongoing activities currently performed under an existing Bridge Task Order to the LANES contractor. The 90-day constraint does ***not*** include the LANES contractor's implementation and deployment of its technical solution. The contractor shall address the technical solution implementation schedule in the PMP. Note: the Transition-In Plan shall address both (1) ongoing activities (ongoing from the Bridge Task Order) and (2) technical solution implementation. The contractor shall complete transition of (1) ongoing activities within 90 days. The contractor shall complete (2) solution

implementation consistent with the proposed Technical Approach. Completion of solution implementation can be later than 90 days.

C.5.3 TASK 3 - TRANSITION-OUT The Transition-Out Plan shall facilitate the accomplishment of a smooth transition from the incumbent to an incoming contractor/Government personnel at the expiration of the TO. The contractor shall provide a Draft Transition-Out Plan **(Section F, Deliverable 16)** NLT six months after project start. The Government will work with the contractor to finalize the Transition-Out Plan **(Section F, Deliverable 17)** in accordance with Section E. At a minimum, this Plan shall be reviewed and updated on an annual basis **(Section F, Deliverable 17)**. Additionally, the Transition-Out Plan shall be reviewed and updated quarterly during the final Option Period **(Section F, Deliverable 17**).

The contractor shall identify how it will coordinate with the incoming contractor and/or Government personnel to transfer knowledge regarding the following:

a. Project management processes.
b. POCs.
c. Location of technical and project management documentation.
d. Status of ongoing technical initiatives.
e. Appropriate contractor-to-contractor coordination to ensure a seamless transition.
f. Transition of Key Personnel.
g. Schedules and milestones.
h. Actions required of the Government.

The contractor shall also establish and maintain effective communication with the incoming contractor/Government personnel for the period of the transition via weekly status meetings. The contractor shall revise the Transition-Out Plan after receipt of Government comments **(Section F, Deliverable 17)**. The contractor shall execute transition-out activities in accordance with the Government-approved Transition-Out Plan.

C.5.4 TASK 4 – TECHNICAL CONSULTING PROJECT ADMINISTRATION

The contractor shall use this task to administer, track, and report the TC work that is embedded throughout Task 5, LAN Operations. (Note, “TC” is an EPA identification code for special consulting projects and is not an acronym.) Technical Consulting Services include special EPA projects within Task 5 that are funded through the WCF and that shall be performed by the contractor. This may encompass EPA IT customer requested moves, additions, and changes to the LAN including network project management and special projects to support evaluations, cross-task efforts, presentations, exercises, and conferences.

The EPA Operation Lead with the TC request shall draft requirements for the contractor. The contractor shall clarify customer needs, define a project plan, and calculate the costs associated with the project. The contractor shall provide this specialized service capability in addition to normal service provisioning for those projects that do not fit but are related to the different common data processing and network support service offerings. Additional information regarding TC projects are described at the task and subtask level.

The contractor shall participate in the Task Assignment process, as follows:

a. The OITO will issue a Requirement Statement to the contractor. Usually requirements are originated by an EPA program office. Each Requirement Statement issued under this process has a unique Task Assignment number for tracking.
b. If needed, the contractor, EPA TPOC, and FEDSIM COR shall meet with the EPA program office to clarify the requirements.
c. The contractor shall respond with a project plan and cost estimate **(Section F, Deliverable 22)**.
d. OITO will review the project plan and cost estimate with the EPA program office customer.
e. If OITO and the program office customer agree to proceed, OITO will approve the Task Assignment.
f. The contractor shall track all work approved under this process by Task Assignment number, WCF Service Code, and Project Code.
g. All work shall be reported in the invoice backup file by service code and project code. The contractor shall assist OITO staff with WCF cost recovery billing for Technical Consulting Services TC and eBusiness products. A clear understanding of the Application Development Checklist (ADC) process, WCF E-business, and related tools is needed. Access to these tools will be provided.

The contractor shall:

a. Assist in placing orders in e-business, researching existing customer billing, and coordinating with OITO staff on new and existing billing needed for customers.
b. Assist in tracking and reporting ongoing billing issues including a mechanism to review open and resolved issues related for both TC and eBusiness customer orders.
c. Assist in tracking billing milestones within the ADC process.
d. Research existing customer billing and WCF costs related to an application, an EPA office, or program. Assist OITO staff in determining if billing adjustments are needed for an ADC deployment, upgrade, or decommissioning.
e. Provide weekly TC billing reports to assist in tracking hourly consumption with all active TC open WCF registrations.
f. Upon request, provide a more detailed analysis of all costs related to an individual, project, deployment, or application support.
g. On request, perform Moves, Adds or Changes (MACs) of local devices.

C.5.5 TASK 5 – LOCAL AREA NETWORK (LAN) OPERATIONS

This task includes the operations, management, and administration of LAN infrastructure and the delivery of related services for EPA.

Additional background information is provided in Section J, Attachment H.

C.5.5.1 SUBTASK 5.1 - LAN OPERATIONS AND SUPPORT

LAN operations provide day-to-day Operations and Maintenance (O&M) for EPA LANs, including the ten U.S. Regions, research laboratories, Washington, D.C. Headquarters, and Research Triangle Park (RTP) sites. EPA LAN facilities are located throughout the continental United States as well as Alaska, Hawaii, and Puerto Rico.

All LAN equipment operated and maintained under this TO is intended to be operational 24x7 to support the agency mission. Specific SLAs are identified in Section H.14. Normal working hours are from 6:30 AM to 9:00 PM eastern time. The contractor shall perform routine system maintenance during the standard maintenance windows Wednesday or Friday nights, from 9:00 PM to 4:00 AM local time or as approved by EPA.

The contractor shall manage and coordinate with support Service Providers to provide services, hardware/software, maintenance, billing/dispute resolution, and problem resolution. The contractor engineers and technicians shall maintain appropriate professional certifications as offered by the equipment manufacturer for the tasks they will be performing in support of this contract.

The contractor shall provide LAN monitoring, reporting, and LAN diagnostics using network sniffers, flow analyzers, Simple Network Management Protocol (SNMP) monitoring, and similar tools **(Section F, Deliverable 23)**.

The contractor shall provide the following:

a. Daily operations and management of LAN operations equipment.
b. LANES infrastructure monitoring including the system interfaces to the WAN, routers, and switches.
c. Backups of the LANES infrastructure configurations to ensure reliability.
d. System software updates to ensure reliability, security, and the highest quality of service possible.
e. Support, as requested via the EPA WCF TC service, LAN work requests including local moves, additions, changes and deletes for sites that do not have network support resources available.
f. Support design, maintenance, operating system upgrades, security patches, configuration management, and other services **(Section F, Deliverable 24)**.
g. IPv4/IPv6 dual stack infrastructure configurations.
h. Monitor local area network devices (e.g., routers, switches, wireless controllers, etc.) using the EPA SNMP monitoring tool (EM7) from ScienceLogic. EM7 is capable of receiving SNMP traps to alert on specific conditions. EM7 is one of the key tools for situational awareness of EPA systems.
i. Manage documentation including network diagrams, procedures, recommendations, problem root cause analysis, reports, inventories, and support for response to audits (e.g., Inspector General (IG), Government Accountability Office (GAO), and third-party reviews) **(Section F, Deliverable 24)**.
j. Support network design, configurations, operations, and management based on EPA policy, Federal Information Security Management Act (FISMA), NIST, and industry best practices.
k. Create and deliver reports related to LAN operations as requested by EPA (e.g., reports related to LAN health) **(Section F, Deliverable 23)**.
l. Submit updates for the Daily Service Report regarding known or ongoing outages.
m. Support Network Access Control (NAC)

1. NAC is currently implemented for Enterprise wireless access only. EPA uses Cisco Identity Services Engine (ISE) infrastructure which includes Cisco ISE, Prime, Mobility Services Engine (MSE), Access Points (APs), and Cisco Wireless Services Module (WiSM) functions. These tools are used for NAC, monitoring, reporting, rogue access point detection, and securing Enterprise Wireless.
2. The Department of Homeland Security (DHS) CDM project is deploying ForeScout technologies in EPA for NAC functions for wired/wireless connectivity to EPA networks.

C.5.5.1.1 EXTENDED SUPPORT LOCATIONS

EPA facilities designated as "Extended Support" (ES) (Section J, Attachment V) have support personnel available after hours to assist in the event of a system outage. Upon notification of an outage at an extended support location during non-business hours, the contractor shall produce an outage notification as identified in the SLAs at H.14 and contact the local support personnel.

Sites not designated as ES, the contractor shall produce an outage notification at the beginning of the next business day. The contractor shall troubleshoot and provide status updates the first business day during normal working hours after the outage was reported.

C.5.5.2 SUBTASK 5.2 – CHANGE, PROBLEM, AND CONFIGURATION MANAGEMENT

C.5.5.2.1 PROBLEM MANAGEMENT

The contractor shall perform problem management, proactively monitoring, identifying, and resolving LAN problems. Tasks shall include:

a. Facilitate network service restoration with minimal business impact.
b. Provide outage, service degrading, and scheduled maintenance notifications after each unscheduled outage or service degrading incident or prior to a scheduled outage via an EPA-approved communications process.
c. Open and manage trouble tickets, reporting and tracking problems via the EPA call management system.
d. Provide status updates every hour until the outage has been resolved. If there are no outage status changes after two hours, then the contractor shall provide significant updates as they become available.
e. Provide normal service restoration as quickly as possible while minimizing adverse business operations impact.
    1. Escalate to a higher level support group(s) as necessary.
    2. Log, track, and manage the resolution to all LAN-related incidents, end-to-end, as well as handle and coordinate resolution of incidents related to external networks impacting the EPA **(Section F, Deliverable 23)**.
    3. Identify, resolve, and report security-related incidents.
f. Provide and maintain all network documentation and procedures. Update documents as changes occur. The contractor shall create a logical, integrated, easily accessible

repository for the task documentation of procedures, scripts, configurations, security changes, project history, and other LAN documentation **(Section F, Deliverable 24**).

g. Protect sensitive task documentation by appropriate security measures consistent with policy and data sensitivity.
h. Incorporate specific documentation in EPA website(s) in a timely manner, when directed by the task manager(s).
i. Collaboratively troubleshoot complex connectivity and communications problems with multiple EPA stakeholders, organizations, and contractor support teams.
j. Maintain monthly LAN outage report **(Section F, Deliverable 23)**. Develop and provide the root cause analysis of incidents and initiate improvement or corrective actions to prevent incident recurrence.

C.5.5.2.2 ASSET AND CONFIGURATION MANAGEMENT

The contractor shall perform asset and configuration management **(Section F, Deliverable 24)** to include identifying problems, reporting and tracking problems via the EPA call management system, developing and providing the root cause analysis of incidents, and initiating improvement or corrective actions to prevent incident recurrence. The contractor shall:

a. Provide and maintain documentation of network assets and configurations, including security configurations (e.g., LAN Security Plan and SCD).
b. Provide LAN hardware and software inventory and network hardware configurations. Coordinate EPA property and loaner equipment movement with the task manager(s), EPA property office(s), and support Service Provider(s), including maintenance providers, so that property is properly accounted for and the proper groups are notified.
c. Maintain historical property information and otherwise assist EPA in locating EPA equipment including physical inventories of LAN tools, equipment, and software.
d. Provide input to an EPA central Configuration Management Database/System (CMDB) and Definitive Software Library.
e. Properly secure, control, and maintain network periodic inventory reconciliations and produce and deliver reports to auditors as requested (e.g., the annual network hardware inventory audit).

C.5.5.2.3 CHANGE MANAGEMENT

The contractor shall support change management and perform the following:

a. Manage the network additions, modifications, or removals of LAN hardware and software.
b. Document change requests using EPA's change control process and recording all service requests in the EPA-approved tracking system that allows for escalation and workload reporting.
c. Participate in Change Advisory Board (CAB) and engineering review boards governing network changes.
d. Produce or provide input to a Forward Schedule of Change(s) (FAC) in accordance with EPA guidelines in the EPA system for change management, presently the call management system.

e. Provide or participate in Post-Implementation Reviews (PIR) to ensure the change met objectives and caused no unanticipated negative consequences, and to solicit effected parties' feedback to monitor the effect of the change.
f. Manage Requests for Comment (RFCs) using industry standard Project Management Professional (PMP) principles, guidelines, and rigor.
g. Ensure change back-out plans are provided, tested, and approved prior to scheduled changes.

C.5.5.2.4 NETWORK MAINTENANCE CONTRACTS MONITORING AND REPORTING

The contractor shall maintain the network maintenance contract records and perform the following:

a. Ensure that maintenance is in place, upon expiration of warranty for new systems, software, and hardware (except "as-is" property) that support the task. Advise the task manager(s) so that arrangements may be made to cover the equipment or software with the appropriate maintenance contract.
b. Advise the EPA TPOC when covered items may be safely removed from maintenance and periodically review maintenance coverage, in coordination with the task manager(s), to reduce maintenance costs.
c. Provide assistance to EPA to ensure that maintenance contracts are revised in a timely fashion to account for items swapped out under a maintenance contract so that the old item is removed and the new item is included under maintenance and there is no double coverage of old and new or lapse in coverage.
d. Maintain manufacturer end-of-support dates for all managed equipment and software, reporting potential lapses one year in advance.

C.5.5.3 SUBTASK 5.3 - NETWORK SECURITY MANAGEMENT

The objective of security management is to provide adequate logical protection for EPA systems, network-attached resources, and data assets of the Agency. The contractor shall protect EPA's network infrastructure devices. Due to the Agency's highly distributed network topology, security management responsibilities have been decentralized in the past. Local System Administrators (SAs) and LAN administrators throughout the Agency programs, regional offices, and laboratories have shared security management responsibilities for the logical protection of their locally managed resources in the past.

EPA requires strong NIST Level 4, two-factor authentication for access to its network. The contractor shall use EPA's two-factor solution or an EPA-approved NIST-compliant alternative for access to all monitored and serviced equipment inside EPA's boundary.

The contractor shall provide security management using industry best practices and shall apply risk management concepts and theories that effectively manage and monitor EPA's IT security infrastructure as it relates to the LAN. The contractor shall provide engineering support in the configuration, management, audit, and operation of security components including, but not limited to, Virtual Private Networks (VPNs), NAC, and network vulnerability and assessment tools **(Section F, Deliverable 25)**.

EPA currently uses Terminal Access Control Access Control Servers (TACACS+) to provide authentication, authorization, and accounting for all elevated privileged access to its network assets. Authentication, authorization, and accounting shall be provided as well as Access Control System (ACS) 5.8 (or an EPA approved alternative) operations and management. The contractor shall configure this system with redundancy in at least two EPA locations for disaster recovery. In addition to necessary contractor administration access, EPA will provide a list of all Federal and contractor employees that perform Tier 1/2 moves, adds, and changes to the switch infrastructure.

The contractor shall support the Agency's information security program through security configuration assessments, operations standards, development and implementation, and security measurement and monitoring of technologies **(Section F, Deliverable 23**). The contractor shall configure LAN infrastructure supporting the Agency implementation and use of sophisticated security and network monitoring tools (e.g., ArcSight Security Incident and Event Management (SIEM), Science Logic's EM7 tool, Symantec Endpoint Protection (SEP), McAfee, ForeScout CA, Tenable Nessus, and Splunk).

The contractor shall remedy or isolate security incidents in accordance with the Computer Security Incident Response Capability (CSIRC) guidelines and report those incidents and resolutions in writing. The contractor shall respond to security scans performed by the EPA by commenting and providing the initial evaluation on the vulnerabilities detected by a scan and resolution.

As part of O&M for new technologies, the contractor shall develop installation instructions, operational security procedures, and other appropriate documentation as it relates to the LAN **(Section F, Deliverable 21)**.

The contractor shall:

a. Consider the security implications and connectivity alternatives available for supporting LAN customers (Security Access Management).
b. Provide strategic analyses and vision for Agency security needs compared to emerging technologies and the need for operations changes (Security Infrastructure Assessment and Planning) as it relates to the LAN.
c. Perform regular, recurring compliance monitoring and reporting, and support special assessment projects that include, but are not limited to, Office of the Inspector General (OIG) audits/reviews, other oversight requirements from internal EPA offices and external entities, and risk assessment support for the LAN environment in accordance with FISMA requirements.
d. Use EPA security lab environments to test the effects and implications of security network infrastructure changes, including scanning and monitoring procedures, and parameter changes as they relate to the LAN.
e. Evaluate new and emerging security technologies to identify security risks and impacts to EPA as they relate to the LAN.
f. Document firewall change requests and obtain authorization via the Agency's Firewall Rule Request (FRR) process **(Section F, Deliverable 24)**.

All EPA network-attached assets must comply with the 2002 FISMA (see http://csrc.nist.gov/drivers/documents/FISMA-final.pdf). The contractor shall ensure that all applicable and

appropriate security controls meet the minimum requirements specified by Federal Information Processing Standards (FIPS) (see http://csrc.nist.gov/publications/fips/fips200/FIPS-200-final-march.pdf). Applicable and appropriate security controls for proposed switching infrastructure solutions are generally described in the NIST SP 800-53 (see http://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-53r4.pdf).

The contractor shall maintain a LAN system security plan **(Section F, Deliverable 25)** that confirms how the switching infrastructure is managed, maintained, administered, and protected from threats and vulnerabilities. Guidance on the expected minimum content and scope of this system security plan can be found in NIST SP 800-18 (see http://csrc.nist.gov/publications/nistpubs/800-18-Rev1/sp800-18-Rev1-final.pdf).

EPA requires all network-attached devices to be configured, to the greatest extent practicable, with Defense Information Systems Agency (DISA) Security Technical Implementation Guides (STIGs) (see http://iase.disa.mil/stigs/Pages/index.aspx). As part of its on-going configuration management practices, the contractor shall perform regular and recurring software maintenance to ensure the optimum, practicable security risk profile for all network-attached assets provided in its solution. At a minimum, this maintenance includes virus protection and patch management.

The contractor shall gather, review, and coordinate data used by EPA for quarterly FISMA reporting for identified General Support Systems (GSSs) and Major Applications (MAs). This effort includes the execution of approved Agency compliance tools on a regularly defined schedule, review and assessment of compliance results against approved system configuration and security control policies and procedures, management and oversight of all remediation activities, and the preparation of quarterly reports documenting National Computer Center (NCC) GSS compliance **(Section F, Deliverable 24)**. Ad hoc compliance testing, assessment, remediation, and reporting are also required as dictated by emergency situations, such as critical system patches and/or system security control changes due to imminent threats.

The contractor shall support and participate in external oversight audits as needed, ensuring inquiries and responses are coordinated, documented, and reviewed by the NCC.

EPA is participating with DHS's United States Computer Emergency Readiness Team (US-CERT) in its CDM program. The primary objective of CDM is to strengthen the overall security posture of Government networks through the regular and recurring scanning, monitoring, evaluating, and reporting on Government network-attached assets. EPA requires all monitored and serviced equipment provided as part of the contractor's solution to be accessible to CDM program tools, with an initial focus on hardware asset management, software asset management, vulnerability management, and configuration settings management **(Section F, Deliverable 24)**. The operational goal for the CDM program is monitoring and reporting on network-attached assets on a recurring 72-hour time window (see https://www.us-cert.gov/cdm).

C.5.5.4 SUBTASK 5.4 – TECHNOLOGY REFRESHMENT

EPA is leveraging network technology advancements that benefit the Agency, including performance, reliability, security, and operational efficiency. The contractor shall maintain current knowledge of new features and capabilities of interest to EPA, including capabilities such as Software Defined Networking (SDN). The contractor shall periodically, and no less that annually, provide a briefing to EPA management and staff covering new networking technologies applicable to the EPA network.

When requested by the Government or offered by the manufacturer, the contractor shall provide to the Government, within 30 calendar days of receipt of Government request or when offered by the manufacturer, a technology refreshment proposal that includes the components identified that will require refreshment **(Section F, Deliverable 26)**.

Any new technology that will upgrade, extend, or enhance the system components shall be evaluated by the contractor. The contractor shall submit a written proposal to the Government describing the proposed technology and identify its benefits and risks. Included in this proposal shall be pricing data (e.g., current published commercial price list or GSA Schedule price list) and other technical information as appropriate. With the receipt of a proposal from the contractor, the Government will have the right to approve any or all of the proposed new technology.

In many agency locations, the current LANES architecture is capable of providing ten gigabit throughput between access, distribution, and core switches. All such switch interconnects shall have redundant paths to offer load balancing during normal operation or failover in case of hardware failover. The network architecture shall be capable of supporting the 10G Base – LX 4 standard, which can be supported on legacy OM1 fiber optic cable as long as the overall cable length is less than 100 meters.

The future architecture shall provide ten gigabit throughput on switch ports and support virtual server clusters and/or Storage Area Networks (SANs) (depending on the size of the site, the switch providing this function is classified as an access, distribution, or core switch).